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Seed treatments, black cutworms, and white grubs: What should you expect?

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More and more corn producers will be planting hybrids this spring with an insecticide applied directly to the seed. These seed treatments belong to a class of insecticides known as the neonicotinoids and depending on the rate, they offer the promise of control of seedcorn maggots, wireworms, white grubs, black cutworms, and even corn rootworms. Prevention of cutting and stand loss from soil-dwelling pests is a goal of many corn producers. The seed treatments, such as Cruiser®, Gaucho®, and Poncho®, are systemic in action, meaning that the chemical is absorbed from the seed coat by the growing seedling and transported to the more actively growing sections of the plant, i.e., new leaves and roots.

During the last two years, I have conducted research with 4th-stage cutworm larvae (the earliest cutting stage) and 3rd-stage white grubs, which are full-grown larvae. Not all commercial products were tested, so side-by-side comparisons with regards to performance should not be assumed from this information. A summary of the entire report can be found here [1] (requires Flash), specifically pages 71-76.

Black Cutworm. No seed treatment provided complete protection against 4th-stage black cutworms. Poncho® 1250 gave the best protection with the number of cut plants ranging from a low 3 percent to a high of 25 percent. Poncho® 250-treated plants had significantly more cutting and ranged from 35-70 percent. Cruiser® was tested at three rates (0.125, 0.25, and 1.25 mg/seed), but not enough data were collected to sufficiently evaluate this product against black cutworms.

White Grub. The low and high rates of both Cruiser® and Poncho® provided very good protection of seedling corn plants against true white grub injury when the insect density was two grubs per plant. Across 10 tests, the percent of live corn plants in the seed treatments averaged 98.9 percent (range 87.5-100 percent) compared to only 47.3 percent (range 6.3-100 percent) live plants in the untreated checks. In several experiments, the seed-treated plants were consistently taller and had greater dry plant weight because of root protection provided by the insecticide that in some instances killed more white grubs. However, populations that exceed two larvae per plant have not been tested, so it is possible that larger densities may be able to overwhelm the insecticide and kill the seedling plant regardless of the seed treatment rate.

The neonicotinoid seed treatments could be valuable tools in the pest management arsenal for some soil-dwelling insects. They appear to be effective against white grubs and black cutworms (high, or 1250, rate only) although cutting that exceeds the economic threshold can occur even with the high rates. Corn fields that historically have had cutworm problems and

are treated with a low rate of any seed treatment should still be scouted for cutworm injury. The low rates of Cruiser® and Poncho® may not stop cutworm damage.

[2]
Test results suggest that both low and high rates of seed treatments on corn can control white grubs. (Marlin E. Rice)

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